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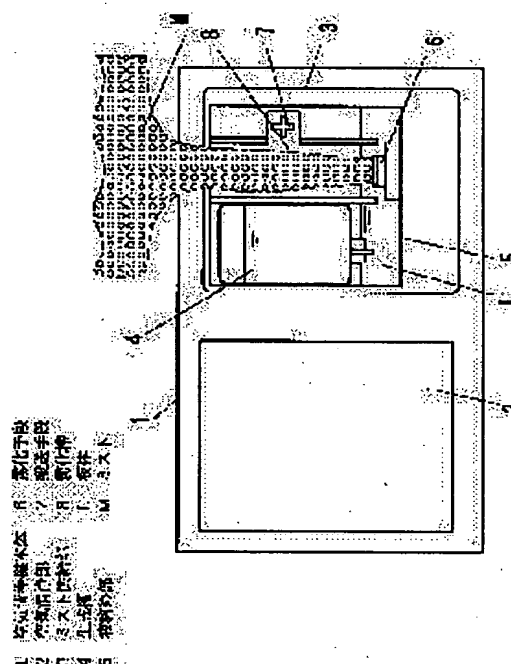
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## (54) AIR CLEANER

## (57)Abstract:

PROBLEM TO BE SOLVED: To provide an air cleaner with which smell, bacteria or viruses stuck on the surface of a wall in a room or the like can be removed.

SOLUTION: In the air cleaner having an air cleaning part 2 for filtering air through a filter, this air cleaner is provided with a liquid reservoir part 5 for reserving a liquid L having deodorizing operation, liquid L having sterilizing operation or liquid L having anti-virus operation, an atomizing means 6 for atomizing the liquid L in the liquid reservoir part 5 and a feeding means 7 for feeding mist M atomized by the atomizing means 6.



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## CLAIMS

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[Claim(s)]

[Claim 1] The air cleaner characterized by having the liquid pool section which collects the liquids which have a deodorization operation in the air cleaner which has the air clarification section which filters air with a filter, a atomization means to atomize the liquid of said liquid pool section, and a conveyance means to convey Myst atomized by said atomization means.

[Claim 2] The air cleaner characterized by having the liquid pool section which collects the liquids which have a germicidal action in the air cleaner which has the air clarification section which filters air with a filter, a atomization means to atomize the liquid of said liquid pool section, and a conveyance means to convey Myst atomized by said atomization means.

[Claim 3] The air cleaner characterized by having the liquid pool section which collects the liquids which have an antiviral action in the air cleaner which has the air clarification section which filters air with a filter, a atomization means to atomize the liquid of the liquid pool section, and a conveyance means to convey Myst atomized by the atomization means.

[Claim 4] The air cleaner according to claim 1 to 3 characterized by a liquid being what has oxidation, such as hydrogen peroxide solution, ozone water, and deodorization liquid.

[Claim 5] The air cleaner according to claim 1 characterized by distributing the fine particles in which a liquid has absorptions, such as TiO<sub>2</sub> and a zeolite.

[Claim 6] The air cleaner according to claim 1 with which a liquid is characterized by distributing a surfactant.

[Claim 7] The air cleaner according to claim 2 characterized by a liquid distributing a germicide.

[Claim 8] The air cleaner according to claim 3 characterized by a liquid distributing an anti-virus agent.

[Claim 9] The air cleaner according to claim 1 to 8 with which particle size is characterized by having the function to generate Myst 5 micrometers or less.

[Claim 10] The air cleaner according to claim 1 to 9 characterized by having the function to generate the number of 3000-1 million Myst/cc.

[Claim 11] The air cleaner according to claim 1 to 10 characterized by preparing the discharge section which controls the Myst particle size by discharging in Myst

generated with a atomization means.

[Claim 12] The air cleaner according to claim 10 which carries out the description of having prepared the electric-field section aiming at a classification in the lower stream of a river of said discharge section.

[Claim 13] The air cleaner according to claim 1 to 12 characterized by having the function which controls the amount of charges of Myst by discharging in Myst generated with a atomization means.

[Claim 14] The air cleaner according to claim 1 to 13 characterized by having the function which generates a radical in Myst by making Myst generated with a atomization means produce cavitation.

[Claim 15] The air cleaner according to claim 1 to 3 characterized by being what a atomization means atomizes by the electrostatic atomization method.

[Claim 16] The air cleaner according to claim 15 characterized by the atomization means consisting of a capillary electrode, the liquid pool section, and the high-voltage generating section.

[Claim 17] The air cleaner according to claim 15 or 16 characterized by the atomization means consisting of a capillary electrode, the liquid pool section, the high-voltage generating section, and a counter electrode electrode.

[Claim 18] The air cleaner according to claim 15 to 17 characterized by applied voltage being a minus electrical potential difference of a direct current.

[Claim 19] The air cleaner according to claim 15 to 18 characterized by the bore of a capillary electrode being 0.05–0.6mm.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the air cleaner aiming at deodorization, sterilization, or the anti-virus of the affix of indoor air and an indoor wall surface.

[0002]

[Description of the Prior Art] The air which is floating to indoor space and which attracted that it was stinking etc., filtered (fill tray SHON), removed with the filter of the air clarification section, and was defecated by filtration carries out the regurgitation of the conventional air cleaner to indoor space by having the air clarification section which filters air with filters, such as activated carbon, and

driving ventilation means, such as a fan.

[0003] However, by this filtration method (fill tray SHON method), it stank and there was a problem adhering to an indoor wall surface etc. that a bacillus and a virus were unremovable.

[0004] This invention is made in view of the above-mentioned point, and it stinks and let it be a technical problem to offer the bacillus and the air cleaner from which a virus is removable adhering to an indoor wall surface etc.

[0005]

[Means for Solving the Problem] The air cleaner of this invention for solving the above-mentioned technical problem is characterized by to have the liquid pool section which collects the liquid which has a deodorization operation, the liquid which has a germicidal action, and the liquids which have an antiviral action in the air cleaner which has the air clarification section which filters air with a filter, a atomization means atomize the liquid of said liquid pool section, and a conveyance means convey Myst atomized by said atomization means. The smell which is floating to indoor space, a bacillus, and a virus are removable in the air clarification section as usual with filtration (fill tray SHON). And at least one of the smell and bacillus which sprayed on the indoor wall surface etc. and adhered to the indoor wall surface etc. by atomizing the liquid which has a deodorization operation, germicidal action, and antiviral action of the liquid pool section with a atomization means, and spraying with a conveyance means, and the viruses is removable.

[0006] Moreover, it also has a desirable liquid that it is characterized by being what has oxidation, such as hydrogen peroxide solution, ozone water, and deodorization liquid. In this case, it oxidizes and the smell and bacillus adhering to an indoor wall surface etc., and a virus can be removed effectively.

[0007] Moreover, it also has a desirable liquid that it is characterized by distributing fine particles with absorptions, such as  $\text{TiO}_2$  and a zeolite. In this case, an adsorbent adsorbs the smell adhering to an indoor wall surface, and it can be removed effectively.

[0008] Moreover, that it is characterized by distributing a surfactant also has a desirable liquid. In this case, a surfactant chemisorbs the smell adhering to an indoor wall surface etc., and it can deodorize effectively.

[0009] Moreover, that it is characterized by distributing a germicide also has a desirable liquid. In this case, a germicide can sterilize the bacillus adhering to an indoor wall surface etc., and a bacillus can be removed effectively.

[0010] Moreover, that it is characterized by distributing an anti-virus agent also has

a desirable liquid. In this case, an anti-virus agent can carry out the anti-virus of the virus adhering to an indoor wall surface etc., and can remove it effectively.

[0011] Moreover, it is also desirable that particle size is characterized by having the function to generate Myst 5 micrometers or less. In this case, it reaches efficiently [ fine Myst 5 micrometers or less ] to the whole interior of a room, and particle size can cover effective and an indoor large area, and can remove the smell and bacillus adhering to an indoor wall surface etc., and a virus.

[0012] Moreover, it is also desirable that it is characterized by having the function to generate the number of 3000–1 million Myst/cc. In this case, Myst of the number of 3000–1 million Myst/cc arrives at the whole interior of a room, effective and an indoor large area can be covered and the smell and bacillus adhering to an indoor wall surface etc., and a virus can be removed.

[0013] Moreover, it is also desirable that it is characterized by preparing the discharge section which controls the Myst particle size by discharging in Myst generated with a atomization means. In this case, particle size can be controlled for Myst atomized with the atomization means by the discharge section, Myst of a still smaller particle size can be sprayed, and it is spread in the whole interior of a room because the particle size of Myst to spray is small, and the smell and bacillus adhering to an indoor wall surface etc., and a virus can continue at least one effectively and broadly, and it can remove. Moreover, since Myst of a bad particle size of diffusibility is not emitted indoors, indoor humidity can be maintained at moderate moisture.

[0014] Moreover, it is also desirable to carry out the description of having prepared the electric-field section aiming at a classification in the lower stream of a river of said discharge section. In this case, by making it Myst classified in the electric-field section, it can be made the thing of only the good Myst particle size of diffusibility, and even if there are few the smells and bacilli which were spread in the whole interior of a room, and adhered to the indoor wall surface etc., and viruses, effective and an indoor large area can be covered and one can be removed. Moreover, since Myst of a bad particle size of diffusibility is not emitted indoors, indoor humidity can be maintained at moderate moisture.

[0015] Moreover, it is also desirable that it is characterized by having the function which controls the amount of charges of Myst by discharging in Myst generated with a atomization means. In this case, by controlling the amount of charges of Myst atomized by the discharge section, when electrostatic diffusion takes place, effective and an indoor large area can be covered and the smell and bacillus which

were spread in the whole interior of a room, and adhered to the indoor wall surface etc., a virus, etc. can be removed.

[0016] Moreover, it is also desirable that it is characterized by having the function which generates a radical in Myst by making Myst generated with a atomization means produce cavitation. In this case, it adhered to the indoor wall surface etc. by generating a radical by cavitation in Myst -- stinking -- at least one of a bacillus and the viruses -- effective -- being removable .

[0017] Moreover, it is also desirable that it is characterized by being what a atomization means atomizes by the electrostatic atomization method. In this case, the smell and bacillus which Myst was charged, become easy to adhere to an indoor wall surface etc., and adhered to the indoor wall surface etc., and a virus are effectively removable by atomizing by the electrostatic atomization method.

[0018] Moreover, it is also desirable that it is characterized by the atomization means consisting of a capillary electrode, the liquid pool section, and the high-voltage generating section. In this case, electrification Myst occurs and electrification Myst which is easy to adhere to an indoor wall surface etc. can remove effectively the smell and bacillus adhering to an indoor wall surface etc.

[0019] Moreover, it is also desirable that it is characterized by the atomization means consisting of a capillary electrode, the liquid pool section, the high-voltage generating section, and a counter electrode electrode. In this case, Myst can be efficiently conveyed indoors from a atomization part, and electrification Myst which is easy to adhere to an indoor wall surface etc. can remove effectively the smell and bacillus adhering to an indoor wall surface etc.

[0020] Moreover, it is also desirable that it is characterized by applied voltage being a minus electrical potential difference of a direct current. In this case, it can atomize efficiently by atomizing with the atomization means of the electrostatic atomization method of minus electrical-potential-difference impression, and electrification Myst which is easy to adhere to an indoor wall surface etc. can remove effectively the smell and bacillus adhering to an indoor wall surface etc., and a virus. Furthermore, an anion can be conveyed indoors.

[0021] Moreover, it is also desirable that it is characterized by the bore of a capillary electrode being 0.05-0.6mm. In this case, a liquid can be comparatively atomized by the low battery (4kV-) by atomizing with a atomization means of an electrostatic atomization method by which the bore of a capillary electrode consists of 0.05-0.6mm, and electrification Myst which is easy to adhere to an indoor wall surface etc. can remove the smell and bacillus adhering to an indoor wall surface

etc., and a virus with effective and low power.

[0022]

[Embodiment of the Invention] First, it states from the example of the gestalt of operation shown in drawing 1 . The interior of the air clarification section 2 and the Myst feed zone 3 has been carried out to the body case body which constitutes the body 1 of an air cleaner. The air clarification section 2 is the thing of the method (fill tray SHON method) filtered with a filter as usual, it has filters, the fans who ventilate, such as activated carbon, and stinks by inhaling and filtering indoor air in the air clarification section 2, and the regurgitation of the air which removed and defecated the bacillus, the virus, etc. is carried out indoors.

[0023] The Myst feed zone 3 consists of the generation tub 4, the liquid pool section 5, a atomization means 6, a conveyance means 7, and a atomization tub 8, and the generation tub 4, the liquid pool section 5, and the atomization tub 8 are opening it for free passage. The generation tub 4 stinks, and it is for generating the liquid L aiming at removing a bacillus and a virus, and the liquid generated by the generation tub 4 is supplied to the liquid pool section 5, and is collected. That to which that to which what generates the liquid L from which a smell is mainly removed generates the liquid L from which a bacillus is mainly removed also generates the liquid L from which a virus is mainly removed also stinks of the generation tub 4, and it may generate the liquid L from which a bacillus and a virus are removed. When Liquid L supplies the liquid pool section 5 from the generation tub 4, it is supplied so that the liquid level of the liquid pool section 5 may become fixed. The atomization means 6 atomizes Liquid L, generates Myst M, and, in this example, is the thing of the ultrasonic atomization method atomized by supersonic vibration. It is like [ the conveyance means 7 conveys Myst M atomized with the atomization means 6 on an indoor wall surface outside the plane etc. from the atomization tub 8, and ] a fan.

[0024] A configuration \*\*\*\* air cleaner operates as follows as mentioned above. When the air clarification section 2 drives, the air clarification section 2 is inhaled, the air of indoor space is filtered with a filter, and stinks, a bacillus, a virus, etc. are removed, the defecated air is breathed out indoors, and the air of indoor space is defecated. The liquid L which, on the other hand, has the deodorization operation and germicidal action which were generated by the generation tub 4, and an antiviral action when the Myst feed zone 3 is driven is supplied to the liquid pool section 5, and are collected. The liquid L of this liquid pool section 5 is atomized with the atomization means 6, and Myst M occurs in the atomization tub 8, and Myst M is conveyed with the conveyance means 7, it is sprayed by the indoor wall surface etc.,



and at least one of the smell and bacillus adhering to an indoor wall surface etc., and the viruses is removed.

[0025] As for the liquid L generated by the above-mentioned Myst feed zone 3, it is desirable that it is also what has oxidation, such as hydrogen peroxide solution, ozone water, and deodorization liquid. In this case, it oxidizes and the smell and bacillus adhering to an indoor wall surface etc., and a virus can be removed effectively.

[0026] Next, the example of the gestalt of operation shown in drawing 2 is described. Only a point which is fundamentally the same and is different from what also shows this example to drawing 1 is mainly described. In this example, the distributed section 9 is formed in the generation tub 4, and it distributes in supersonic vibration. In this generation tub 4, generate the liquid L which distributed fine particles with absorptions, such as TiO<sub>2</sub> and a zeolite, generate the liquid L which distributed the surfactant, the liquid L which distributed the germicide is generated, or the liquid L which distributed the anti-virus agent is generated.

[0027] A configuration \*\*\*\* air cleaner operates as follows as mentioned above. When the air clarification section 2 drives, the air clarification section 2 is inhaled, the air of indoor space is filtered with a filter, and stinks, a bacillus, a virus, etc. are removed, the defecated air is breathed out indoors, and the air of indoor space is defecated. On the other hand, if the Myst feed zone 3 is driven, by the generation tub 4, the liquid L which was made to distribute fine particles and a surfactant with an absorption, a germicide, and an anti-virus agent, and was generated will be supplied to the liquid pool section 5, and will be collected. The liquid L of this liquid pool section 5 is atomized with the atomization means 6, and Myst M occurs in the atomization tub 8, and Myst M is conveyed with the conveyance means 7, it is sprayed by the indoor wall surface etc., and the smell and bacillus adhering to an indoor wall surface etc., and a virus are removed. When Myst M which made the liquid L which distributed fine particles with an absorption atomize is sprayed, an adsorbent adsorbs the smell adhering to an indoor wall surface, and it can be removed effectively. Moreover, when Myst M which made the liquid L which distributed the surfactant atomize is sprayed, a surfactant chemisorbs the smell adhering to an indoor wall surface etc., and it can deodorize effectively. When Myst M which made the liquid L which distributed the germicide atomize is sprayed, a germicide can sterilize the bacillus adhering to an indoor wall surface etc., and a bacillus can be removed effectively. When Myst M which made the liquid L which distributed the anti-virus agent atomize is sprayed, an anti-virus agent can carry out

the anti-virus of the virus adhering to an indoor wall surface etc., and can remove it effectively.

[0028] Next, the example of the gestalt of operation shown in drawing 3 is described. This example also mainly describes only a point which is fundamentally the same and is different from the example of drawing 1 . The drive control section 10 of the atomization means 6 of an ultrasonic atomization method controls the frequency of supersonic vibration. By controlling this frequency, particle size has atomized Myst M 5 micrometers or less.

[0029] A configuration \*\*\*\* air cleaner operates as follows as mentioned above. When the air clarification section 2 drives, the air clarification section 2 is inhaled, the air of indoor space is filtered with a filter, and stinks, a bacillus, a virus, etc. are removed, the defecated air is breathed out indoors, and the air of indoor space is defecated. The liquid L which, on the other hand, has the deodorization operation and germicidal action which were generated by the generation tub 4, and an antiviral action when the Myst feed zone 3 is driven is supplied to the liquid pool section 5, and are collected. It is atomized with a atomization means 6 by which frequency control of the liquid L of this liquid pool section 5 was carried out by the drive control section 10, and Myst M with a particle size of 3 micrometers or less occurs in the atomization tub 8, and this Myst M is conveyed with the conveyance means 7, it is sprayed by the indoor wall surface etc., and the smell and bacillus adhering to an indoor wall surface etc., and a virus are removed. Thus, when particle size generates Myst 5 micrometers or less and sprays, fine Myst M 5 micrometers or less can cover effective and an indoor large area in the smell and bacillus which arrived at the whole interior of a room efficiently, and adhered to the indoor wall surface etc., and a virus, and particle size can remove.

[0030] Next, the example of the gestalt of operation shown in drawing 4 is described. This example also mainly describes only a point which is fundamentally the same and is different from the example of drawing 1 . The drive control section 11 of the atomization means 6 of an ultrasonic atomization method carries out power control. Thus, by controlling the power to drive, it atomizes so that the number of Myst M may become [ cc ] in 3000-1 million pieces /.

[0031] A configuration \*\*\*\* air cleaner operates as follows as mentioned above. When the air clarification section 2 drives, the air clarification section 2 is inhaled, the air of indoor space is filtered with a filter, and stinks, a bacillus, a virus, etc. are removed, the defecated air is breathed out indoors, and the air of indoor space is defecated. The liquid L which, on the other hand, has the deodorization operation

and germicidal action which were generated by the generation tub 4, and an antiviral action when the Myst feed zone 3 is driven is supplied to the liquid pool section 5, and are collected. It is atomized with a atomization means 6 by which power control of the liquid L of this liquid pool section 5 was carried out by the drive control section 11, and Myst M whose number of Myst is 3000-1 million pieces/cc occurs in the atomization tub 8. This Myst M is conveyed with the conveyance means 7, it is sprayed by the indoor wall surface etc., and the smell and bacillus adhering to an indoor wall surface etc., and a virus are removed. Thus, when the number of Myst generates Myst M which is 3000-1 million pieces/cc and sprays, Myst M whose number of Myst is 3000-1 million pieces/cc arrives at the whole interior of a room, effective and an indoor large area can be covered and the smell and bacillus adhering to an indoor wall surface etc., and a virus can be removed.

[0032] Next, the example of the gestalt of operation shown in drawing 5 is described. This example also mainly describes only a point which is fundamentally the same and is different from the example of drawing 1. In this example, the discharge section 12 is formed in the outlet side of the atomization tub 8, and the particle size of Myst M is controlled and it has been made to set particle size of Myst M by discharging from the discharge section 12 in atomized Myst to 2 micrometers or less.

[0033] A configuration \*\*\*\* air cleaner operates as follows as mentioned above. When the air clarification section 2 drives, the air clarification section 2 is inhaled, the air of indoor space is filtered with a filter, and stinks, a bacillus, a virus, etc. are removed, the defecated air is breathed out indoors, and the air of indoor space is defecated. The liquid L which, on the other hand, has the deodorization operation and germicidal action which were generated by the generation tub 4, and an antiviral action when the Myst feed zone 3 is driven is supplied to the liquid pool section 5, and are collected. The liquid L of this liquid pool section 5 is atomized with the atomization means 6, and Myst M occurs, while this Myst M is conveyed with the conveyance means 7, particle size of Myst M is set to 2 micrometers or less by the discharge from the discharge section 12, and it is sprayed by the indoor wall surface etc., and the smell and bacillus adhering to an indoor wall surface etc., and a virus are removed. In this case, particle size can be controlled for Myst M atomized with the atomization means 6 by the discharge section 12, Myst M of a still smaller particle size can be sprayed, and it is spread in the whole interior of a room because the particle size of Myst M to spray is small, and it can continue effectively and broadly and the smell and bacillus adhering to an indoor wall surface etc., and a virus can be removed. Moreover, since Myst M of a bad particle size of diffusibility is not

emitted indoors, indoor humidity can be maintained at moderate moisture.

[0034] Next, the example of the gestalt of operation shown in drawing 6 is described. This example also describes only a point which is fundamentally the same and is different from the example of drawing 1 . In this example, the discharge section 12 which discharges in order to control the particle size of Myst M atomized to the outlet side of the atomization tub 8 is formed, and the electric-field section 13 which classifies Myst M from this discharge section 12, applying electric field to an outlet side is formed.

[0035] A configuration \*\*\*\* air cleaner operates as follows as mentioned above. When the air clarification section 2 drives, the air clarification section 2 is inhaled, the air of indoor space is filtered with a filter, and stinks, a bacillus, a virus, etc. are removed, the defecated air is breathed out indoors, and the air of indoor space is defecated. The liquid L which, on the other hand, has the deodorization operation and germicidal action which were generated by the generation tub 4, and an antiviral action when the Myst feed zone 3 is driven is supplied to the liquid pool section 5, and are collected. The liquid L of this liquid pool section 5 is atomized with the atomization means 6, and Myst M occurs. When this Myst M is conveyed with the conveyance means 7 and Myst M passes the discharge section 12, the particle size of Myst M is controlled by discharge from the discharge section 12. When Myst M by which this particle size was controlled passes, Myst M is classified in the electric field by the electric-field section 13, classification \*\*\*\* Myst M is sprayed by the indoor wall surface etc., and the smell and bacillus adhering to an indoor wall surface etc., and a virus are removed. In this case, by classifying and spraying Myst M in electric field, it can be made the thing of only the good Myst particle size of diffusibility, and effective and an indoor large area can be covered and the smell and bacillus which were spread in the whole interior of a room, and adhered to the indoor wall surface etc., and a virus can be removed. Moreover, since Myst M of a bad particle size of diffusibility is not emitted indoors, indoor humidity can be maintained at moderate moisture.

[0036] Next, the example of the gestalt of operation shown in drawing 7 is described. This example also describes only a point which is fundamentally the same and is different from the example of drawing 1 . In this example, the discharge section 14 which discharges in order to make Myst M atomized to the outlet side of the atomization tub 8 charge is formed. Control-section 14a which controls discharge by current control is prepared in this discharge section 14, and the amount of charges can be controlled now to carry out current control.

[0037] A configuration \*\*\*\* air cleaner operates as follows as mentioned above. When the air clarification section 2 drives, the air clarification section 2 is inhaled, the air of indoor space is filtered with a filter, and stinks, a bacillus, a virus, etc. are removed, the defecated air is breathed out indoors, and the air of indoor space is defecated. The liquid L which, on the other hand, has the deodorization operation and germicidal action which were generated by the generation tub 4, and an antiviral action when the Myst feed zone 3 is driven is supplied to the liquid pool section 5, and are collected. The liquid L of this liquid pool section 5 is atomized with the atomization means 6, and Myst M occurs. While this Myst M is conveyed with the conveyance means 7, the amount of charges of Myst atomized by the discharge from the discharge section 14 is controlled, and it is sprayed by the indoor wall surface etc., and the smell and bacillus adhering to an indoor wall surface etc., and a virus are removed. In this case, by controlling the amount of charges of Myst M atomized by the discharge section 14, when electrostatic diffusion takes place, effective and an indoor large area can be covered and the smell and bacillus which were spread in the whole interior of a room, and adhered to the indoor wall surface etc., a virus, etc. can be removed.

[0038] Next, the example of the gestalt of operation shown in drawing 8 is described. This example also describes only a point which is fundamentally the same and is different from the example of drawing 1 . In this example, the cavitation generation section 15 for making Myst M atomized to the outlet side of the atomization tub 8 produce cavitation is formed, and a radical is generated in Myst M by making Myst M produce cavitation.

[0039] A configuration \*\*\*\* air cleaner operates as follows as mentioned above. When the air clarification section 2 drives, the air clarification section 2 is inhaled, the air of indoor space is filtered with a filter, and stinks, a bacillus, a virus, etc. are removed, the defecated air is breathed out indoors, and the air of indoor space is defecated. The liquid L which, on the other hand, has the deodorization operation and germicidal action which were generated by the generation tub 4, and an antiviral action when the Myst feed zone 3 is driven is supplied to the liquid pool section 5, and are collected. The liquid L of this liquid pool section 5 is atomized with the atomization means 6, and Myst M occurs. It is making Myst M produce cavitation in the cavitation generation section 15, while this Myst M is conveyed with the conveyance means 7, into Myst M, a radical is generated and it is sprayed by the indoor wall surface etc., and the smell and bacillus adhering to an indoor wall surface etc., and a virus are removed. In this case, the smell and bacillus adhering to an

indoor wall surface etc., and a virus are effectively removable by generating a radical by cavitation in Myst.

[0040] Next, the example of the gestalt of operation shown in drawing 9 or drawing 10 is described. Only a point which is fundamentally the same and is different from the above-mentioned example of this example is described. In this example, atomize the atomization means 6 by the electrostatic atomization method, and the atomization means 6 of drawing 9 consists of a capillary electrode 16, the liquid pool section 5, and the high-voltage generating section 17. The atomization means 6 of drawing 10 consists of the capillary electrode 16, the liquid pool section 5, the high-voltage generating section 17, and a counter electrode electrode 18, and electrostatic atomization can be carried out when all impress the high voltage to the capillary electrode 16 or the capillary electrode 16, and the counter electrode electrode 18.

[0041] A configuration \*\*\*\* air cleaner operates as follows as mentioned above. When the air clarification section 2 drives, the air clarification section 2 is inhaled, the air of indoor space is filtered with a filter, and stinks, a bacillus, a virus, etc. are removed, the defecated air is breathed out indoors, and the air of indoor space is defecated. The liquid L which, on the other hand, has the deodorization operation and germicidal action which were generated by the generation tub 4, and an antiviral action when the Myst feed zone 3 is driven is supplied to the liquid pool section 5, and are collected. The liquid L of this liquid pool section 5 is atomized by the electrostatic atomization method with the atomization means 6, and Myst M occurs, and this Myst M is conveyed with the conveyance means 7, it is sprayed by the indoor wall surface etc., and the smell and bacillus adhering to an indoor wall surface etc., and a virus are removed. In this case, the smell and bacillus which Myst M was charged, become easy to adhere to an indoor wall surface etc., and adhered to the indoor wall surface etc., and a virus are effectively removable by atomizing by the electrostatic atomization method. Moreover, if the atomization means 6 consists of the capillary electrode 16, the liquid pool section 5, and the high-voltage generating section 16, electrification Myst M occurs and electrification Myst which is easy to adhere to an indoor wall surface etc. can remove effectively the smell and bacillus adhering to an indoor wall surface etc. Moreover, if the atomization means consists of the capillary electrode 16, the liquid pool section 5, the high-voltage generating section 17, and a counter electrode electrode 18, electrification Myst M which conveys Myst M indoors from a atomization part efficiently and which can carry out things and is easy to adhere to an indoor wall surface etc. can remove effectively

the smell and bacillus adhering to an indoor wall surface etc.

[0042] Moreover, it is desirable that the applied voltage which is the thing of drawing 9 and drawing 10 and is impressed from the high-voltage generating section 17 of the atomization means 6 is a minus electrical potential difference of a direct current. In this case, it can atomize efficiently by atomizing with the atomization means 6 of the electrostatic atomization method of minus electrical-potential-difference impression, and electrification Myst M which is easy to adhere to an indoor wall surface etc. can remove effectively the smell and bacillus adhering to an indoor wall surface etc., and a virus. Furthermore, an anion can be conveyed indoors.

[0043] Moreover, it is the thing of drawing 9 and drawing 10, and it is desirable that the bore of the capillary electrode 16 is 0.05–0.6mm. In this case, a liquid can be comparatively atomized by the low battery (4kV-) by atomizing with a atomization means 6 of an electrostatic atomization method by which the bore of the capillary electrode 16 consists of 0.05–0.6mm, and electrification Myst M which is easy to adhere to an indoor wall surface etc. can remove the smell and bacillus adhering to an indoor wall surface etc., and a virus with effective and low power.

[0044]

[Effect of the Invention] In the air cleaner which has the air clarification section in which invention of claim 1 of this invention thru/or claim 3 filters air with a filter Since it had the liquid pool section which collects the liquid which has a deodorization operation, the liquid which has a germicidal action, and the liquids which have an antiviral action, a atomization means to atomize the liquid of said liquid pool section, and a conveyance means to convey Myst atomized by said atomization means That it stinks and floating to indoor space can remove by filtration (fill tray SHON) in the air clarification section as usual a bacillus and a virus, of course It stinks and is the bacillus and the thing which can remove at least one of the viruses which sprayed on the indoor wall surface etc. and adhered to the indoor wall surface etc. by atomizing the liquid which has a deodorization operation, germicidal action, and antiviral action of the liquid pool section with a atomization means, and spraying with a conveyance means.

[0045] Moreover, it is the thing in which invention of claim 4 of this invention adhered to the indoor wall surface etc. since a liquid has oxidation, such as hydrogen peroxide solution, ozone water, and deodorization liquid, in either claim 1 thru/or claim 3 and which stinks, oxidizes and can remove a bacillus and a virus effectively.

[0046] Moreover, in claim 1, since the fine particles in which a liquid has absorptions, such as TiO<sub>2</sub> and a zeolite, are distributed, an adsorbent adsorbs the smell adhering

to an indoor wall surface, and invention of claim 5 of this invention can be removed effectively.

[0047] Moreover, in claim 1, a surfactant chemisorbs the smell by which it adhered to the indoor wall surface etc. since the liquid distributed the surfactant, and invention of claim 6 of this invention can be deodorized effectively.

[0048] Moreover, in claim 2, a germicide can sterilize the bacillus with which it adhered to the indoor wall surface etc. since the liquid distributed the germicide, and invention of claim 7 of this invention can remove a bacillus effectively.

[0049] Moreover, in claim 3, since a liquid distributes an anti-virus agent, an anti-virus agent can carry out the anti-virus of the virus adhering to an indoor wall surface etc., and invention of claim 8 of this invention can remove it effectively.

[0050] Moreover, in claim 1 thru/or claim 8, since invention of claim 9 of this invention has the function in which particle size generates Myst 5 micrometers or less, it is the thing in which fine Myst 5 micrometers or less reached efficiently [ particle size ] to the whole interior of a room, and adhered to the indoor wall surface etc. and which stinks, can cover effective and an indoor large area and can remove a bacillus and a virus.

[0051] Moreover, in claim 1 thru/or claim 9, since invention of claim 10 of this invention has the function to generate the number of 3000–1 million Myst/cc, it is the thing which Myst of the number of 3000–1 million Myst/cc arrived at the whole interior of a room, and adhered to the indoor wall surface etc. and which stinks, can cover effective and an indoor large area and can remove a bacillus and a virus.

[0052] Moreover, since invention of claim 11 of this invention prepared the discharge section which controls the Myst particle size by discharging in claim 1 thru/or claim 10 in Myst generated with a atomization means Particle size can be controlled for Myst atomized with the atomization means by the discharge section, and Myst of a still smaller particle size can be sprayed. The smell which was spread in the whole interior of a room because the particle size of Myst to spray is small, and adhered to the indoor wall surface etc., Since a bacillus and a virus can continue at least one effectively and broadly, it cannot remove and Myst of a bad particle size of diffusibility is not emitted indoors, indoor humidity can be maintained at moderate moisture.

[0053] Moreover, since invention of claim 12 of this invention prepared the electric-field section aiming at a classification in the lower stream of a river of said discharge section in claim 10 By making it Myst classified in the electric-field section, it can be made the thing of only the good Myst particle size of diffusibility. It



stinks, and since there is nothing that were spread in the whole interior of a room, and adhered to the indoor wall surface etc. and for which an indoor large area can be covered, it can remove and a bacillus and a virus emit [ that at least one is effective ] Myst of a bad particle size of diffusibility indoors, indoor humidity can be maintained at moderate moisture.

[0054] Moreover, since invention of claim 13 of this invention has the function which controls the amount of charges of Myst by discharging in either claim 1 thru/or claim 12 in Myst generated with a atomization means By controlling the amount of charges of Myst atomized by the discharge section, when electrostatic diffusion takes place, it is the thing which was spread in the whole interior of a room, and adhered to the indoor wall surface etc. and which stinks, can cover effective and an indoor large area and can remove a bacillus, a virus, etc.

[0055] Moreover, in either claim 1 thru/or claim 13, since invention of claim 14 of this invention has the function which generates a radical in Myst by making Myst generated with a atomization means produce cavitation, it is the thing adhering to an indoor wall surface etc. from which it stinks and a bacillus and a virus can remove at least one effectively by generating a radical by cavitation in Myst.

[0056] Moreover, in either claim 1 thru/or claim 3, since a atomization means atomizes invention of claim 15 of this invention by the electrostatic atomization method, it is the thing which Myst was charged, becomes easy to adhere to an indoor wall surface etc., and adhered to the indoor wall surface etc. and which stinks and can remove a bacillus and a virus effectively by atomizing by the electrostatic atomization method.

[0057] Moreover, electrification Myst which electrification Myst generates invention of claim 16 of this invention in claim 15 since the atomization means consists of a capillary electrode, the liquid pool section, and the high-voltage generating section, and is easy to adhere to an indoor wall surface etc. is the thing adhering to an indoor wall surface etc. which stinks and can remove a bacillus effectively.

[0058] Moreover, electrification Myst which invention of claim 17 of this invention can convey Myst indoors from a atomization part efficiently in claim 15 or claim 16 since the atomization means consists of a capillary electrode, the liquid pool section, the high-voltage generating section, and a counter electrode electrode, and is easy to adhere to an indoor wall surface etc. is the thing adhering to an indoor wall surface etc. which stinks and can remove a bacillus effectively.

[0059] Moreover, it can stink, a bacillus and a virus can be removed effectively and an anion can be conveyed [ electrification Myst which can atomize efficiently by

atomizing with the atomization means of the electrostatic atomization method of minus electrical-potential-difference impression since invention of claim 18 of this invention is the minus electrical potential difference of a direct current of applied voltage in either claim 15 thru/or claim 17, and is easy to adhere to an indoor wall surface etc. adhered to the indoor wall surface etc. to be able to convey ] further indoors.

[0060] Moreover, in either claim 15 thru/or claim 18, since the bore of a capillary electrode is 0.05–0.6mm, invention of claim 19 of this invention By atomizing with a atomization means of an electrostatic atomization method by which the bore of a capillary electrode consists of 0.05–0.6mm Electrification Myst which can atomize a liquid by the low battery (4kV–) comparatively, and is easy to adhere to an indoor wall surface etc. is the thing adhering to an indoor wall surface etc. which stinks and can remove a bacillus and a virus with effective and low power.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the sectional view of an example of the gestalt of operation of this invention.

[Drawing 2] It is the sectional view of other examples same as the above.

[Drawing 3] It is the sectional view of other examples same as the above.

[Drawing 4] It is the sectional view of other examples same as the above.

[Drawing 5] It is the sectional view of other examples same as the above.

[Drawing 6] It is the sectional view of other examples same as the above.

[Drawing 7] It is the sectional view of other examples same as the above.

[Drawing 8] It is the sectional view of other examples same as the above.

[Drawing 9] It is the sectional view of other examples same as the above.

[Drawing 10] It is the sectional view of other examples same as the above.

[Description of Notations]

1 Body of Air Cleaner

2 Air Clarification Section

3 Myst Feed Zone

4 Generation Tub

5 Liquid Pool Section

6 Atomization Means

7 Conveyance Means

8 Atomization Tub  
9 Distributed Section  
10 Drive Control Section  
11 Drive Control Section  
12 Discharge Section  
13 Electric-Field Section  
14 Discharge Section  
15 Cavitation Generation Section  
16 Capillary Electrode  
17 High-Voltage Generating Section  
18 Counter Electrode Electrode  
L Liquid  
M Myst

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